

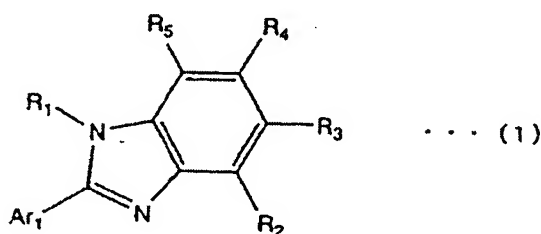
AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently amended) An electroluminescent element comprising:
a pair of electrodes; and
an electroluminescent layer comprising a host material and a guest material and provided between said pair of electrodes,
wherein each of said host material and said guest material is a compound having a skeleton represented by the general formula 1:

Formula 1



wherein, in the guest material:

R₁ is a hydrogen atom, a lower alkyl group, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and

R₂ to R₅, each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a

heterocyclic group which may have a substituent, and Ar_1 is an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and wherein, in the host material:

R_1 is a hydrogen atom, a lower alkyl group, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent,

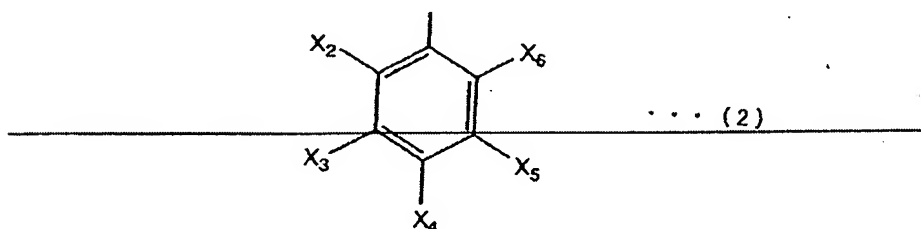
three of R_2 to R_5 , each of which may be the same or different, are individually a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and Ar_1 is an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and

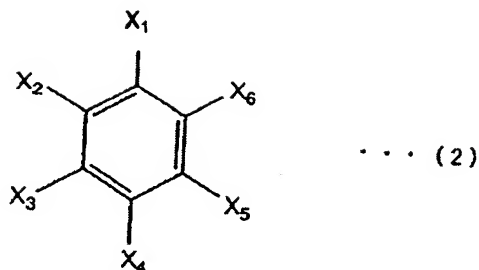
one of R_2 to R_5 is a hydrogen atom.

2. (Currently amended) An electroluminescent element comprising:
a pair of electrodes; and
an electroluminescent layer comprising a host material and a guest material and provided between said pair of electrodes,

wherein said host material is a compound having a skeleton represented by the general formula 2:

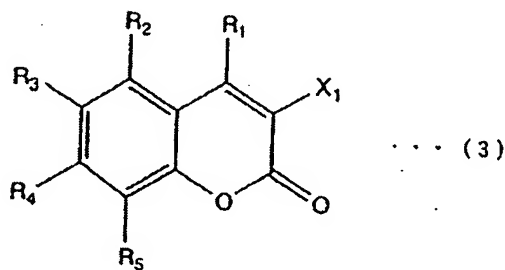
Formula 2





wherein said guest material is a compound having a skeleton represented by the general formula 3:

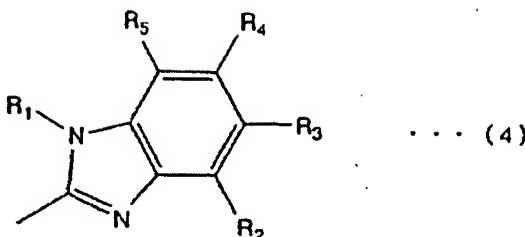
Formula 3



wherein R₁ is a hydrogen atom, a lower alkyl group, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and R₂ to R₅, each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent,

wherein at least one substituent out of substituents X₁ to X₆ represented by the general formula 2 and a substituent X₁ represented by the general formula 3 have an imidazole skeleton represented by the general formula 4:

Formula 4



wherein, in the guest material:

R₁ is a hydrogen atom, a lower alkyl group, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and

R₂ to R₅, each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and

wherein, in the host material:

R₁ is a hydrogen atom, a lower alkyl group, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent,

three of R₂ to R₅, each of which may be the same or different, are individually a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and

one of R₂ to R₅ is a hydrogen atom.

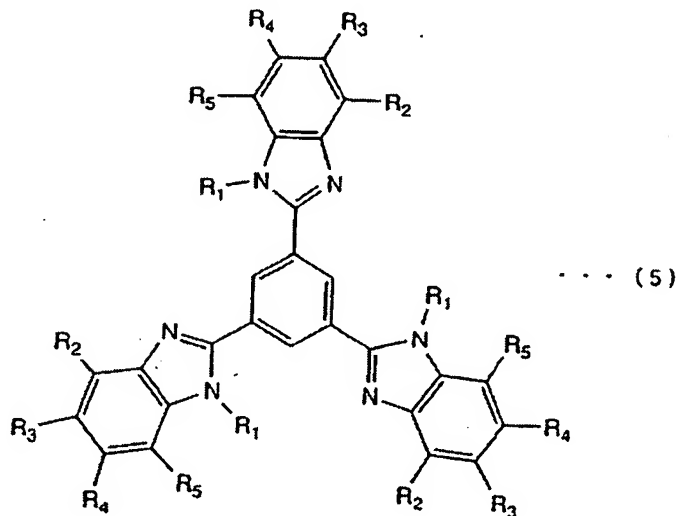
3. (Currently amended) An electroluminescent element comprising:

a pair of electrodes; and

an electroluminescent layer comprising a host material and a guest material and provided between said pair of electrodes,

wherein said host material is a compound represented by the general formula 5:

Formula 5



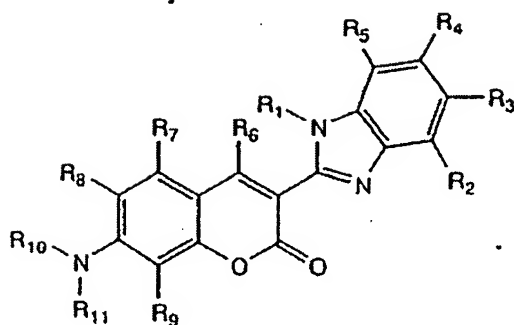
wherein R₁ is a hydrogen atom, a lower alkyl group, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent,

and wherein three of R₂ to R₅, each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent,

wherein one of R₂ to R₅ is a hydrogen atom. and

wherein said guest material is a compound represented by the general formula 6:

Formula 6



wherein R₁ is a hydrogen atom, a lower alkyl group, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, R₂ to R₉, each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and R₁₀ and R₁₁ are individually a hydrogen atom, a lower alkyl group, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and

wherein R₃ and R₁₀, and R₉ and R₁₁, may be bonded each other to form a substituted or nonsubstituted saturated six-membered ring.

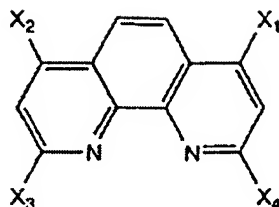
4. (Cancelled)

5. (Withdrawn) An electroluminescent element comprising:

a pair of electrodes; and

host materials and guest materials provided between said electrodes and having in their molecule skeletons represented by the general formula 9:

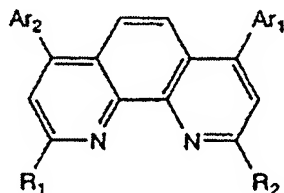
Formula 9



wherein X_1 to X_4 , each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent.

6. (Withdrawn) An electroluminescent element comprising: a pair of electrodes;
a compound provided between said electrodes as host materials represented by the general formula:

Formula 10

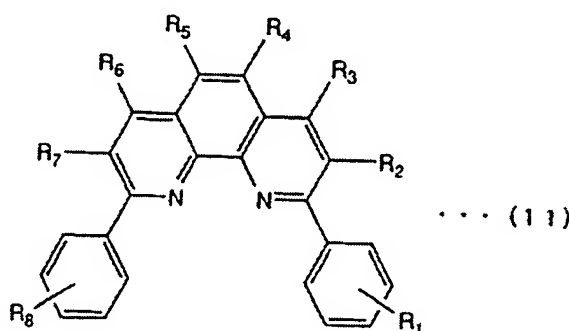


wherein Ar_1 and Ar_2 , each of which may be the same or different, are individually an aryl group which may have a substituent, or a heterocyclic group which may have a substituent, and R_1 and R_2 , each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group,

an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent;

and a compound provided between said electrodes as guest materials represented by the general formula 11:

Formula 11



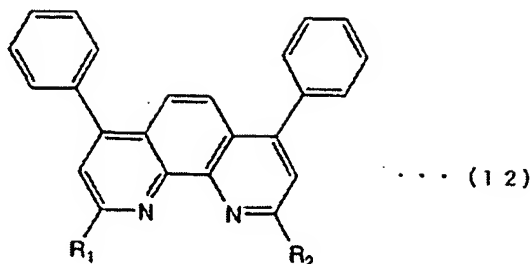
wherein R₁ to R₈, each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent.

7. (Withdrawn) An electroluminescent element comprising:

a pair of electrodes;

a compound provided between said electrodes as host materials represented by the general formula 12:

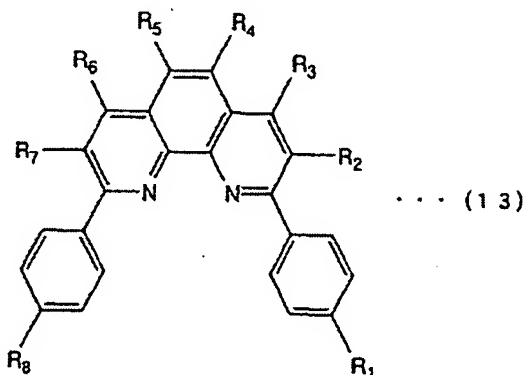
Formula 12



wherein R₁ and R₂, each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent;

and a compound provided between said electrodes as guest materials represented by the general formula 13:

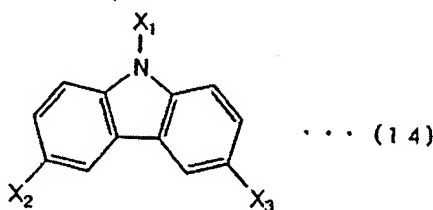
Formula 13



wherein R₁ to R₈, each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent.

8. (Withdrawn) An electroluminescent element comprising:
a pair of electrodes; and
host materials and guest materials having in their molecule skeletons represented by the
general formula 14:

Formula 14



wherein X₁ to X₃, each of which may be the same or different, are individually a hydrogen atom, a halogen atom, a lower alkyl group, an alkoxy group, an acyl group, a nitro group, a cyano group, an amino group, a dialkylamino group, a diarylamino group, a vinyl group which may have a substituent, an aryl group which may have a substituent, or a heterocyclic group which may have a substituent.

9. (Currently amended) An electroluminescent element according to ~~claim 4~~ claim 3 wherein said electroluminescent element is incorporated into one selected from the group consisting of a display device, a computer, an image reproduction device including a recording medium, a goggle type display, a camera, and a cellular phone.

10. (Currently amended) An electroluminescent element according to ~~claim 4~~ claim 3 wherein one of said electrodes is an anode.

11. (Previously Presented) An electroluminescent element according to claim 10 wherein said anode comprises a material selected from the group consisting of indium tin oxide, indium

zinc oxide composed of indium oxide mixed with zinc oxide, aurum, platinum, nickel, tungsten, chrome, molybdenum, ferrum, cobalt, copper, palladium, and nitride of metal material.

12. (Currently amended) An electroluminescent element according to ~~claim 4~~ claim 3 wherein the other of said electrodes is a cathode.

13. (Previously Presented) An electroluminescent element according to claim 12 wherein said cathode comprises a material selected from the group consisting of alkaline metal, alkaline earth metal, alloy thereof, and compound thereof.

14. (Previously Presented) An electroluminescent element according to claim 12 wherein said cathode comprises a material selected from the group consisting of Li, Cs, Mg, Ca, Sr, Mg:Ag, Al:Li, LiF, CsF and CaF₂.

15. (Currently amended) An electroluminescent element according to ~~claim 4~~ claim 3 wherein each of said electrodes has a thickness of 10 to 500 nm.

16. (Currently amended) An electroluminescent element according to ~~claim 4~~ claim 3 wherein at least one of said electrodes comprises a material having light transmission properties.

17. (Currently amended) An electroluminescent element according to ~~claim 4~~ claim 3 wherein said compound provided between said electrodes as said host materials is provided in a light-emitting layer, and wherein said compound provided between said electrodes as said guest materials is provided in said light-emitting layer.

18. (Currently amended) An electroluminescent element according to ~~claim 4~~ claim 3 further comprising an electron transporting layer provided between said electrodes.

19. (Currently amended) An electroluminescent element according to ~~claim 4~~ claim 3 further comprising a hole injecting layer provided between said electrodes.

20. (Currently amended) An electroluminescent element according to ~~claim 4~~ claim 3 further comprising a hole blocking layer provided between said electrodes.

21. (Previously Presented) An electroluminescent element according to claim 17 wherein said light-emitting layer is provided over one of said electrodes which is an anode, and wherein the other of said electrodes which is a cathode is provided over said light-emitting layer.

22. (Previously Presented) An electroluminescent element according to claim 17 wherein said light-emitting layer is provided over one of said electrodes which is a cathode, and wherein the other of said electrodes which is an anode is provided over said light emitting layer.

23. (Previously Presented) An electroluminescent element according to claim 17 further comprising an electron transporting layer provided over said light-emitting layer wherein said light-emitting layer is provided over one of said electrodes which is an anode, and wherein the other of said electrodes which is a cathode is provided over said electron transporting layer.

24. (Previously Presented) An electroluminescent element according to claim 17 further comprising a hole injecting layer provided over one of said electrodes which is an anode wherein said light-emitting layer is provided over said hole injecting layer, and wherein the other of said electrodes which is a cathode is provided over said light-emitting layer.

25. (Previously Presented) A light-emitting device comprising the electroluminescent element according to claim 1 in a pixel portion.

26. (Previously Presented) A light-emitting device comprising the electroluminescent element according to claim 2 in a pixel portion.

Applicant : Satoshi Seo et al.
Serial No. : 10/801,113
Filed : March 16, 2004
Page : 14 of 18

Attorney's Docket No.: 12732-0220001 / US7048

27. (Previously Presented) A light-emitting device comprising the electroluminescent element according to claim 3 in a pixel portion.

28-32. (Cancelled)